FACT SHEET

L-1222

TEXAS LEAF-CUTTING ANT

Kenneth R. Lewis*

The Texas leaf-cutting ant (*Atta texana* Buckley) has several other common names, such as town ant, cut ant, parasol ant, fungus ant and night ant. This insect removes needles, leaves and buds from a variety of plants, including natural and planted pine and hardwood trees and several cereal and forage crops. These ants do not eat the plant material but cut it into small fragments that are carried into underground chambers. The plant material serves as a medium upon which they culture a fungus that is their only known food.

Ordinarily, little damage is done to pines when other green plants are available. But during the winter when other green material is scarce, pines can be seriously damaged. In East Texas and West-Central Louisiana, this insect is a serious pest of pine seedlings.

In areas where these ants are abundant, it is almost impossible to establish natural pine reproduction. When infested areas are planted, the young seedlings often are destroyed within a few days unless the ants are controlled before planting is done.

DESCRIPTION

Leaf-cutting ants are rust brown to dull dark brown, and they vary greatly in size, figure 1. The workers range from 1/16- to 1/2-inch long, and the queen is about 3/4-inch long. Workers have three pairs of prominent spines upon the thorax, and the abdomen bears a sting that is not always visible, figure 2. Large flattened mandibles often are used to inflict painful bites.

The queen is the reproductive center of the colony and lives in a chamber below ground. Some colonies have as many as four or five fertile females. They deposit tiny, pearly-white eggs which develop into cream-colored larvae ranging from 1/4- to 1/2-inch long. Subsequently, most of the pupae become sterile-female worker ants that vary in form and size.

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LIFE HISTORY AND HABITS

On clear, moonless nights from April into June, winged males and females leave the colony on mating flights. After mating, the females lose their wings, establish nests beneath the soil and become the queens of new colonies. Individual colonies may exist for years, continuing to increase in size to include several hundred thousand inhabitants.

Ant nest areas or "towns" may be established along roads, in open areas or in the shade of forests. However, these colonized areas apparently are restricted to deep, well-drained sand or loamy soils. A town is marked by a large number of crater-shaped mounds, usually 5 to 14 inches in height and about 1 foot in diameter, figure 3. Each mound surrounds an entrance hole. A town may cover an area from several square feet to nearly an acre, depending upon the age of the colony. In heavily infested areas, it is often difficult to distinguish where one colony ends and another begins.

The interior of the nest, which may reach a depth of 15 to 20 feet, contains many hemispherical cavities that are interconnected by narrow tunnels, figure 4. Vertical tunnels extend to the mound openings and lateral foraging tunnels lead outward, sometimes 100 yards or more, to enlarged openings or "feeder holes" at the surface. The so-called feeder holes, which are scattered around the edge of towns, admit busy ants carrying their plant cuttings below ground.

Activity of the ants above ground depends largely on the temperature. During the summer, the ants will forage mostly at night. In the fall, winter and spring, when air temperatures range between 45

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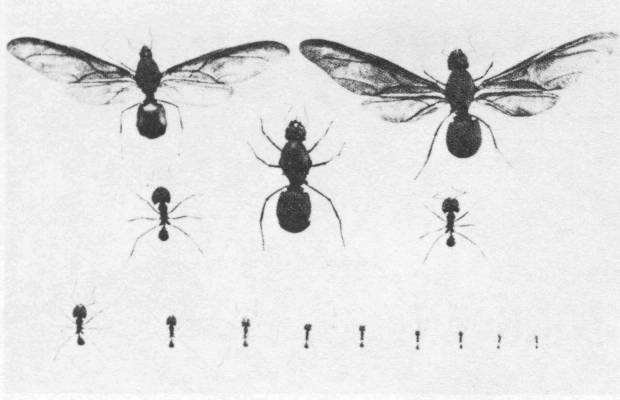

Figure 1. Leaf-cutting ant castes and sizes. A male at the upper left, a virgin queen at upper right, and a mated queen at center. Workers are shown without differentiation of castes.

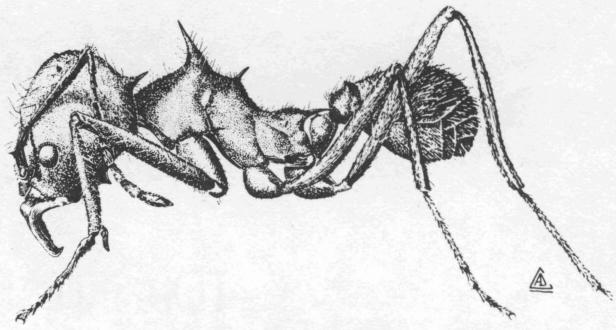

Figure 2. Lateral view of worker ant.

Figure 3. Town marked by many crater-shaped mounds.

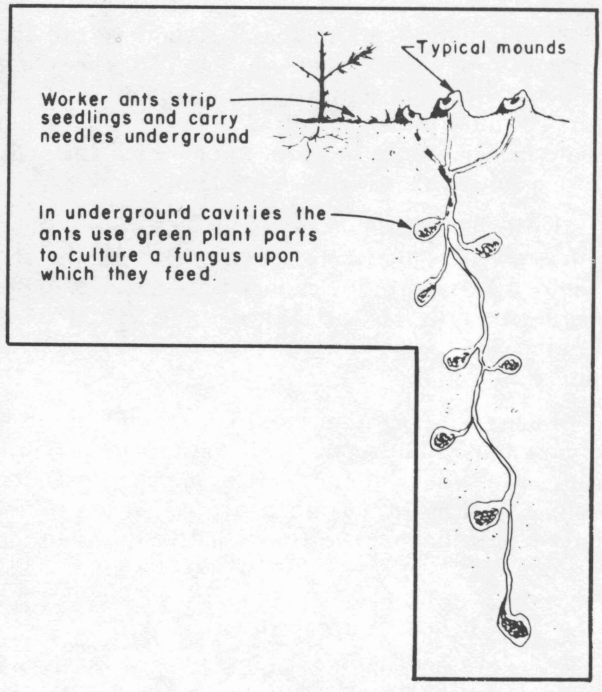

Figure 4. Profile of nest showing interior cavities and tunnels.

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and 80 degrees F., foraging generally takes place during the day. Most of the mound building and similar activities also are attempted during cool parts of the year. The ants will be mostly inactive on cold, wet or cloudy days.

Above ground, the ants clear sharply defined foraging trails that extend from feeder holes to food plants that may be as far as 500 to 600 feet from the nest, figure 5. They file along these trails carrying fragments of needles or other plant material like tiny parasols, figure 6. At the entrance to the feeder holes, the ants chew the fragments into smaller pieces better suited for their underground fungus gardens.

Figure 5. Foraging trails over which the ants carry plant material.[2]

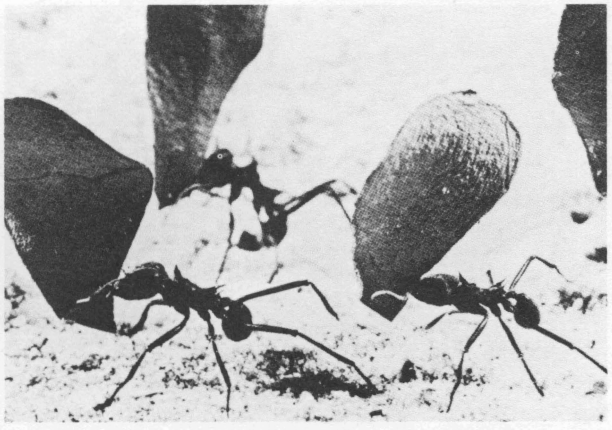

Figure 6. Worker ants carry large pieces of leaves to their nests for culture of their food fungus.[3]

[2,3]Illustration copied from: Hutchins, R. E. 1967. *The Ant Realm*. Dodd, Mead & Co., New York, p. 205.

DAMAGE SYMPTOMS

Defoliation by Texas leaf-cutting ants can resemble the damage produced by several other leaf-chewing insects, particularly sawflies. However, the injured trees usually are within sight of ant nests, or the ants themselves may be seen cutting the needles. Also, bits of needles often are left about the base of trees and along the foraging trails. Seedlings usually are stripped completely of their needles and, on occasion, even the buds and bark may be removed. When larger pines are attacked, however, the needles are only partly destroyed and short stubs are left along the twigs. Generally, the ants will defoliate trees from the top branches downward.

CONTROL MEASURES

Efforts should be made to find and treat all ant colonies located in or near areas to be established with pine seedlings. Untreated ones will remain a source of reinfestation and future losses. Looking for colonies is most feasible during the fall and early winter when the ants are active and their mounds are not hidden by vegetation. As they are located, the colonies should be marked so they can be easily found by control crews.

Since no natural control has yet been found for these ants, chemical treatment is used. Pelleted mirex bait is the most effective control currently available. The bait is easy to apply, as it can be broadcast mechanically or by hand (wearing rubber gloves). Foraging worker ants search out the pellets and carry them underground. To treat small nests, pellets should be scattered only over the central nest area where most of the mounds are concentrated. For medium-sized and large nests, an additional 20-foot strip bordering the central nest area should be treated. For a nest with 150 mounds, about 1 pound of bait is recommended. But, for smaller or larger nests, proportionate amounts from ¼ pound to 6 pounds should be adequate. Applications can be made in all seasons, except in periods of prolonged rain or freezing weather.

Mirex bait is formulated for delayed action so that the bait can be carried deep into the nest. Thus the entire colony, including immature ants and the queen, is exposed to the chemical. The first signs of control will be a reduction in foraging and excavation activities. Results normally can be seen within 5 to 14 days after application. These activities will gradually stop, with the entire colony dead in 5 to 6 weeks.

The bait, which can be obtained in local seed stores under the name Mirex Pelleted Bait "450," should be stored so as not to be contaminated by volatile materials such as oil, insecticides or herbicides.

INSECTICIDE SAFETY PRECAUTIONS

Before using any chemical, READ THE LABEL and follow indicated application procedures and safety precautions. Avoid prolonged chemical contact with skin. Wash exposed skin areas with generous amounts of soap and water.

Store chemicals in locked cabinets out of reach of children and pets.

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